



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
/United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,830	04/05/2004	Shinichiro Minato	1259-0248PUS1	2715
2292	7590	11/16/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			ALEXANDER, MICHAEL P	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/816,830	Applicant(s) MINATO, SHINICHIRO	
	Examiner Michael P. Alexander	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5 April 2004</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-6, drawn to a method for controlling a concentration of a solution for an electroerosive process, classified in class 205, subclass 641.
- II. Claims 7-8, drawn to an apparatus for controlling a concentration of an electrolytic solution, classified in class 204, subclass 400.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used for controlling a concentration of a solution for an electroplating process.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Marc Weiner on 8 September 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-6. Affirmation of this election must be made by applicant in replying to this Office action. Claims 7-8 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Claim Objections***

Claim 1 is objected to because of the following informalities: "said electrolytic current" has no antecedent basis. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admission in the background section of the specification of the instant application (page 1 line 14 – col. 2 lines 8) in view of Balisky (US 6,521,112 B1).

Regarding claim 1, the applicant admits (page 1 line 14 – col. 2 line 8) a method for controlling a concentration of an electrolytic solution for making an electrolytic treatment of a metallic material, comprising the steps of: measuring a acid concentration of acid in said electrolytic solution; measuring a salt concentration of salt which is generated by ionizing part of said metallic material in said electrolytic solution

Art Unit: 1742

in said electrolytic treatment; and using a controller for controlling the concentration of each component in the electrolytic solution, which would inherently include adding at least one of a dilution liquid and a fresh acid according to said measured acid concentration and said measured salt concentration.

Still regarding claim 1, the admission does not include adding at least one of a diluting liquid and a fresh acid according to a current value of said electrolytic current supplied during said electrolytic treatment. However, Balisky teaches (abstract) a method of controlling the content of an electrochemical bath, wherein replenishment of the constituents of the bath is determined in response to measurement of the ampere-hours (i.e. current value) in order to replenish constituents as they actually are consumed. It would have been obvious to one of ordinary skill in the art to modify the method of the admitted prior art by replenishing the diluting liquid or acid constituent according the current value of the electrolytic current supplied during the electrolytic treatment in order to replenish the constituents as they are actually used.

Regarding claim 2, the method of the admitted prior art in view of Balisky would inherently include calculating a feed cycle of adding a predetermined amount of said diluting liquid from said measured salt concentration and said current value.

Regarding claim 3, the method of the admitted prior art in view of Balisky would inherently include calculating a difference from said measured acid concentration to an objected acid concentration; and adding said fresh acid to said electrolytic solution when said difference is larger than a predetermined limit value.

Regarding claim 4, the method of the admitted prior art in view of Balisky would inherently include that the current value is  $I$ , and  $A$  and  $B$  are optional constants, a standard cycle  $T_o$  for adding said diluting liquid to said electrolytic solution is  $T_o = A/I + B$ , and wherein said measured salt concentration is  $PV_a$ , said objected salt concentration is  $SV_a$ , and  $C$  and  $D$  are optional constants, said feed cycle  $T$  for adding the predetermined amount of said diluting liquid is,  $T = T_o \times (1 + C \times (PV_a - SV_a)) + D$ .

Regarding claim 5, the applicant admits (page 1 lines 10-24) that the method of the prior art would apply to an aluminum plate used for a substrate of a PS plate.

Regarding claim 6, the applicant admits (page 1 lines 24-28) that the method of the prior art would include hydrochloric acid.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Alexander whose telephone number is 571-272-8558. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mpa  
mpa

ROY KING   
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700